

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 21, 1997
Date Received: March 18, 1997
Project: Metro Grab, PO #M56568
Date Samples Extracted: March 18, 1997
Date Extracts Analyzed: March 19, 1997

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
FOR CHROMIUM, COPPER, NICKEL, AND ZINC**

USING METHOD 6010

Samples Processed Using Method 3005A

Results Reported as mg/L (ppm)

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M56568	0.46	0.49	0.44	<0.05
Method Blank	<0.05	<0.05	<0.05	<0.05

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**QUALITY ASSURANCE RESULTS
 FOR TOTAL METALS BY
 INDUCTIVELY COUPLED PLASMA (ICP)
 (METHOD 6010)**

Laboratory Code: 76617 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
Chromium	mg/L (ppm)	0.36	0.34	6	0-20
Copper	mg/L (ppm)	0.30	0.29	3	0-20
Nickel	mg/L (ppm)	0.26	0.27	4	0-20
Zinc	mg/L (ppm)	<0.05	<0.05	nm	0-20

Laboratory Code: 76617 (Matrix Spike)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
				<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	0.36	94	94	80-120	0
Copper	mg/L (ppm)	5	0.30	96	95	80-120	1
Nickel	mg/L (ppm)	10	0.26	93	92	80-120	1
Zinc	mg/L (ppm)	5	<0.05	93	91	80-120	2

Laboratory Code: Spike Blank

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
			<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	95	94	80-120	1
Copper	mg/L (ppm)	5	94	95	80-120	1
Nickel	mg/L (ppm)	10	95	95	80-120	0
Zinc	mg/L (ppm)	5	94	95	80-120	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

1 Pm

AKC-0011669

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Beth M. Albertson, M.S.
Bradley T. Benson
Kelley D. Wilt

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044

March 21, 1997

**INVOICE # 97ACU0321-1
DUPLICATE COPY**

Accounts Payable
Alaskan Copper Works
628 South Hanford St.
Seattle, WA 98134

RE: Project Metro Grab, PO #M56568: Results of testing requested by Gerry Thompson, Project Manager for material submitted on March 18, 1997.

1 water sample analyzed for
Chromium, Copper, Nickel, and Zinc
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due

\$ 65.00

FEDERAL TAX ID # (b) (6)

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March 21, 1997

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford St.
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on March 18, 1997 from your Metro Grab, PO #M56568 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

A handwritten signature in black ink, appearing to read 'Kurt Johnson', with a long horizontal stroke extending to the right.

Kurt Johnson
Chemist

keh
Enclosures
ACU0321R.DOC